

GP-304503

HYDROTAPPING POWER UNIT

ABSTRACT OF THE DISCLOSURE

A hydrotapping power unit is disclosed that is operable to hold a hydrotapping tool in a home position adjacent a part while the latter is being hydroformed in a die cavity, to then advance the tool to pierce a hole in the hydroformed part while the part remains in the die cavity and under pressure and then continue to advance the tool to inwardly extrude the part about the hole, to then further advance while also rotating the tool at a feed rate equal to the thread pitch of the tool to thereby form a thread in the pierced hole, and finally retract while also rotating the tool but in the reverse direction and at the same feed rate to release the tool from the threaded hole. The power unit for performing these operations includes a linearly moveable shaft for holding the tool, a powered device for rotating the shaft, another powered device connected to the shaft by a lead screw connection having a thread pitch equal to that of the tool, and a third powered device that is adapted to intercept and prevent shock loading on the tool from the piercing operation and thereby on the shaft from reaching the lead screw connection.